

*A View for the New Year:  
Recovery from Hurricanes  
and New Gulf Developments*

*January 10, 2006*

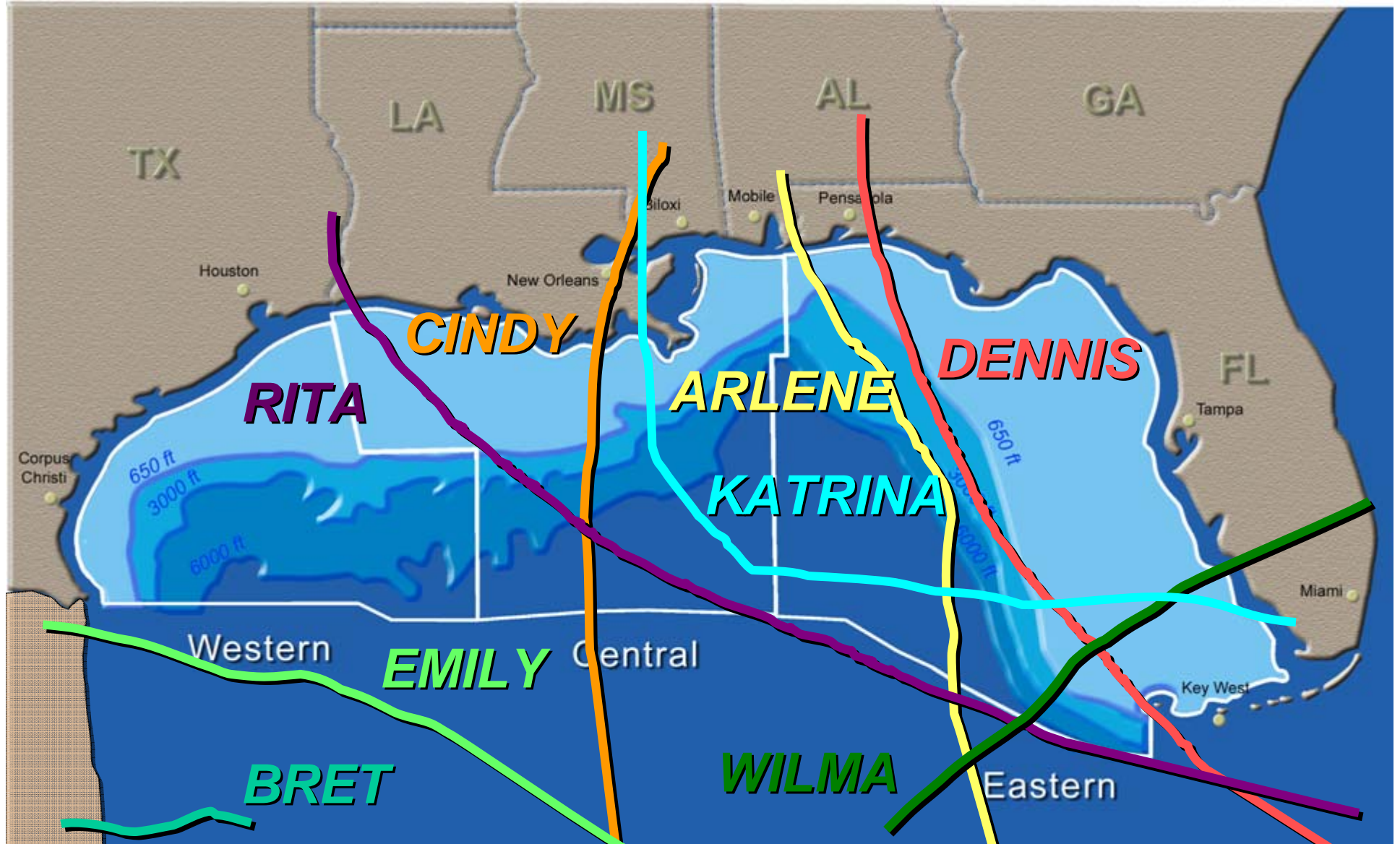
*Presentation at API Houston Chapter Luncheon*

**Chris Oynes**

Regional Director  
Gulf of Mexico OCS Region  
Minerals Management Service

**MMS**

# 2005 HURRICANE SEASON

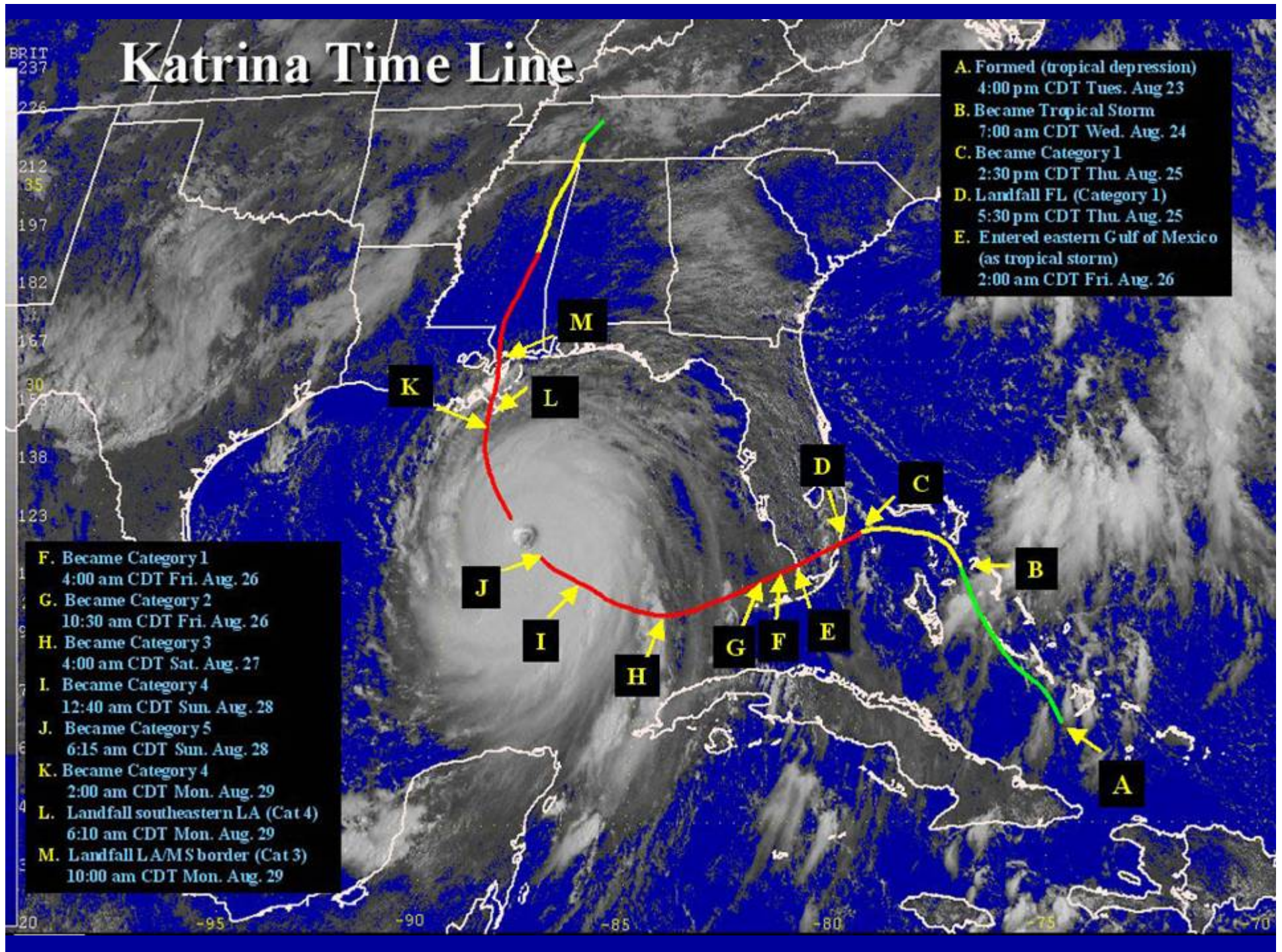




# Katrina Time Line

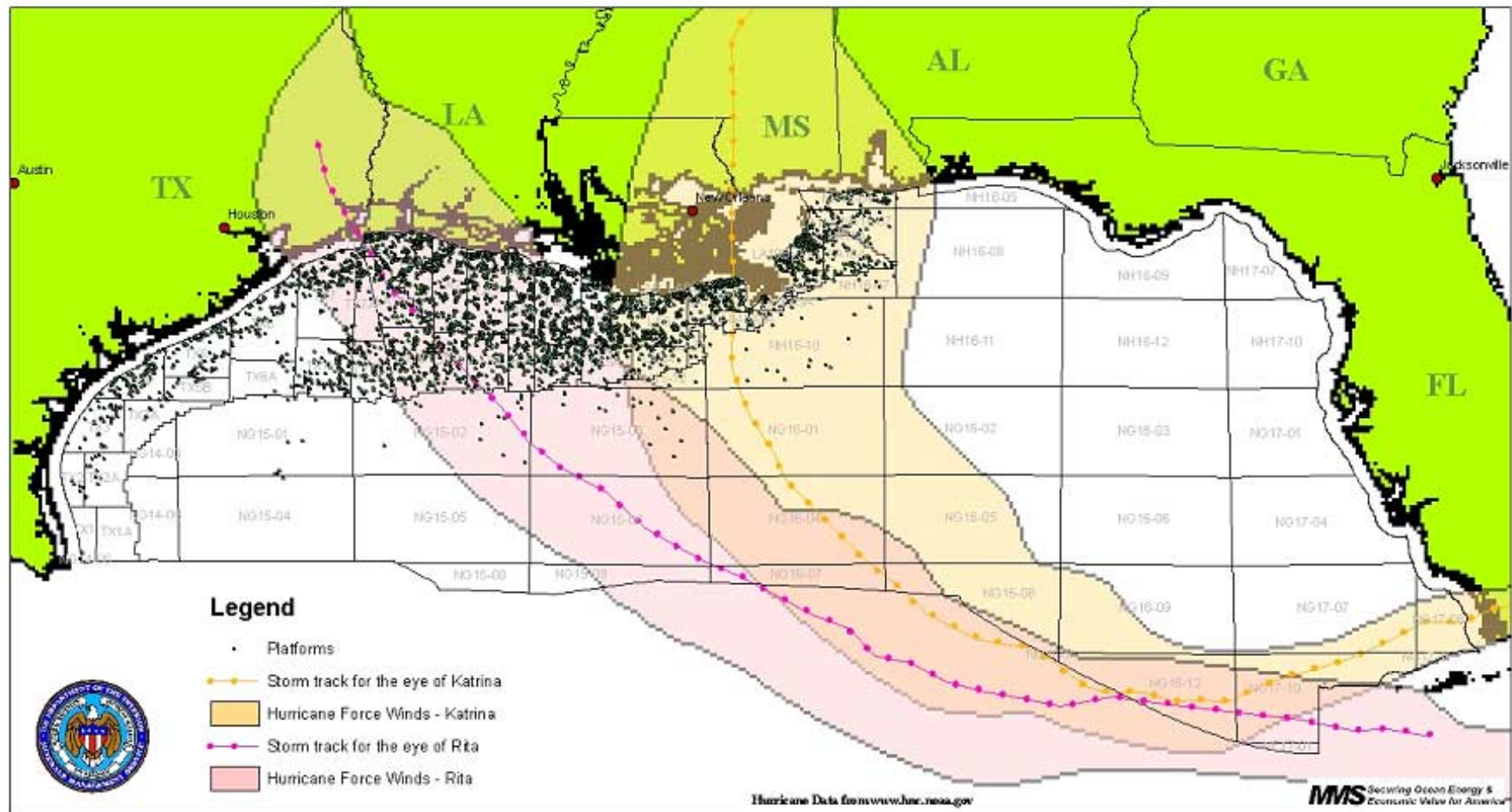
- A.** Formed (tropical depression)  
4:00 pm CDT Tues. Aug. 23
- B.** Became Tropical Storm  
7:00 am CDT Wed. Aug. 24
- C.** Became Category 1  
2:30 pm CDT Thu. Aug. 25
- D.** Landfall FL (Category 1)  
5:30 pm CDT Thu. Aug. 25
- E.** Entered eastern Gulf of Mexico  
(as tropical storm)  
2:00 am CDT Fri. Aug. 26

- F.** Became Category 1  
4:00 am CDT Fri. Aug. 26
- G.** Became Category 2  
10:30 am CDT Fri. Aug. 26
- H.** Became Category 3  
4:00 am CDT Sat. Aug. 27
- I.** Became Category 4  
12:40 am CDT Sun. Aug. 28
- J.** Became Category 5  
6:15 am CDT Sun. Aug. 28
- K.** Became Category 4  
2:00 am CDT Mon. Aug. 29
- L.** Landfall southeastern LA (Cat 4)  
6:10 am CDT Mon. Aug. 29
- M.** Landfall LA/MS border (Cat 3)  
10:00 am CDT Mon. Aug. 29





## Hurricanes Rita and Katrina, August - September 2005





AP / David J. Phillip

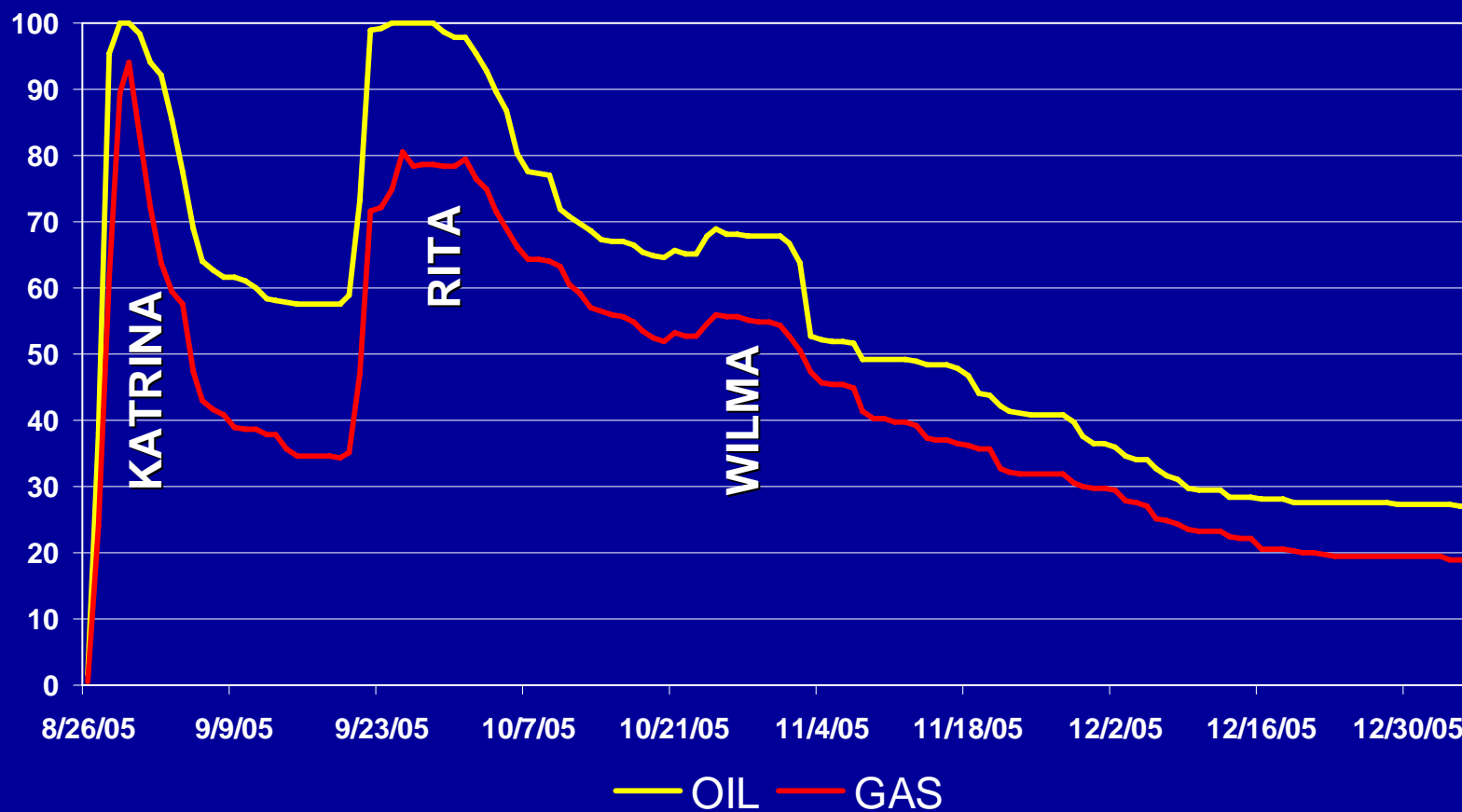
Cameron, La., in coastal southwest Louisiana, was flooded after suffering extensive storm damage. Associated Press photo by David J. Phillip



AP / LM Otero

High water covers a trailer and a shed in the port city of Lake Charles, La., after Hurricane Rita pushed ashore Saturday. Associated Press photo by LM Otero

## Percentage of GOM Production Shut-in



As of January 5, 2006

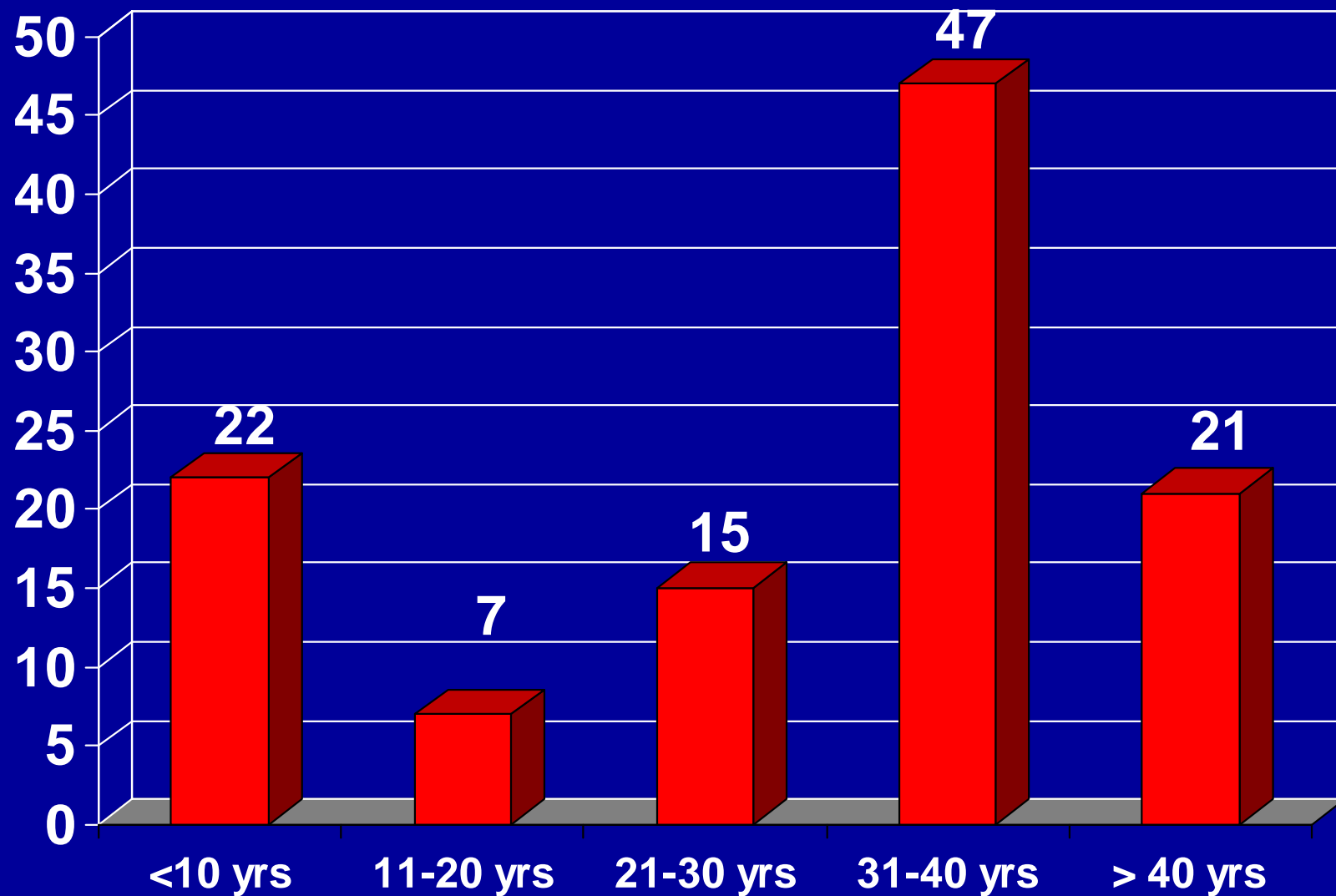
# Damaged & Destroyed Platforms

	Katrina	Rita
Destroyed	47	66
Extensive Damage	20	32





# Platforms by Age Destroyed by Hurricanes Katrina and Rita



# Toppled Platforms

## Devon Energy SM 128 SA-1

➤ Before Rita



➤ After Rita



# Toppled Platforms

## BT Operating EI 294 A

➤ Before Rita



➤ After Rita





# Lost Rigs

- GlobalSantaFe High Island III
- GlobalSantaFe Adriatic VII



# Chevron Typhoon

(Grounded at EI 270)



# Most common type of pipeline damage caused by Hurricane Rita





# Damage

The number and type of damage will only grow in the next 12 months as underwater surveys and assessments are completed.

# Major Issues in Hurricane

- 19 MODU's were set adrift from Hurricanes Katrina and Rita
- MODU's adrift are not acceptable
- Secretary of DOI met with companies Nov. 17 to discuss changes
- Companies are evaluating/making mooring changes

# Other Changes?

- Examine structural standards
- Mud slides
- More reporting?



# MMS Proposed Research for Hurricanes Katrina & Rita Request for Papers

- Assess/evaluate pipeline movement/damage
- Assess/evaluate platform damage
- Provide hindcast data for wind, wave & currents
- Assess/evaluate performance of jack-up rigs
- Assess methods to eliminate hydrates in pipelines and risers during start-up
- Model waves and currents produced by hurricanes

# **MMS COOP Operation**

- **With the approach of Hurricane Katrina, MMS mobilized its continuity of operations plan (COOP).**
- **A small temporary office (6) was created in Houston to monitor the storm damage and direct operations.**
- **October 28 – 450 MMS employees reoccupied part of its New Orleans Office and all employees reported back to work**
- **The Regional Office with 150 employees remains in Houston while the New Orleans office is rebuilt.**

# New Developments in the Gulf of Mexico

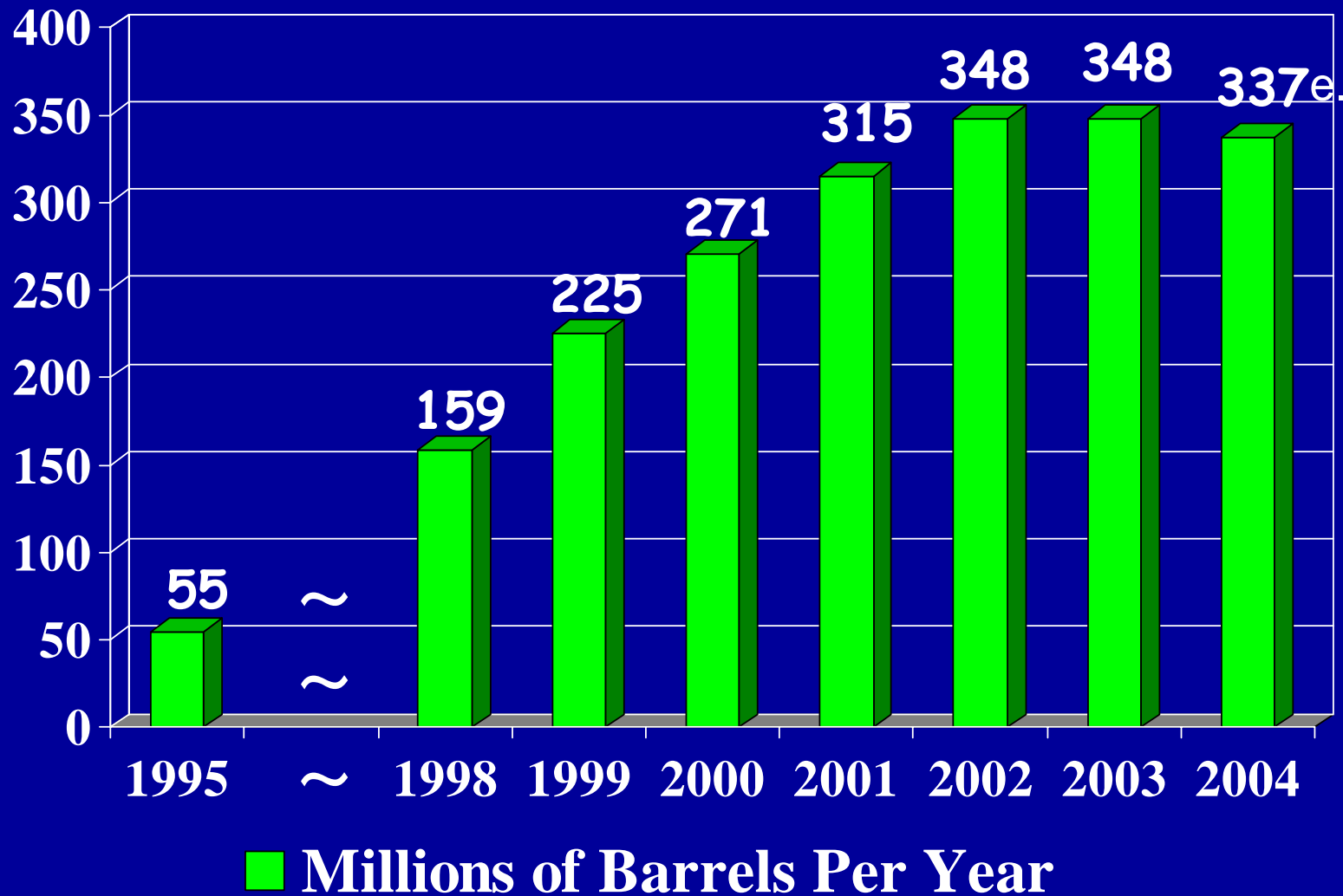
# **Energy Bill Provisions that Will Affect Lease Sales**

- **Added a third tier of royalty relief for deep gas drilling in 0 - 200m of water (> 20,000 ft.)**
- **Added three tiers of royalty relief for deep gas drilling in 200 - 400m of water**
- **Added a royalty relief level in deep water -  
- 16 mmboe in depths greater than 2000m**

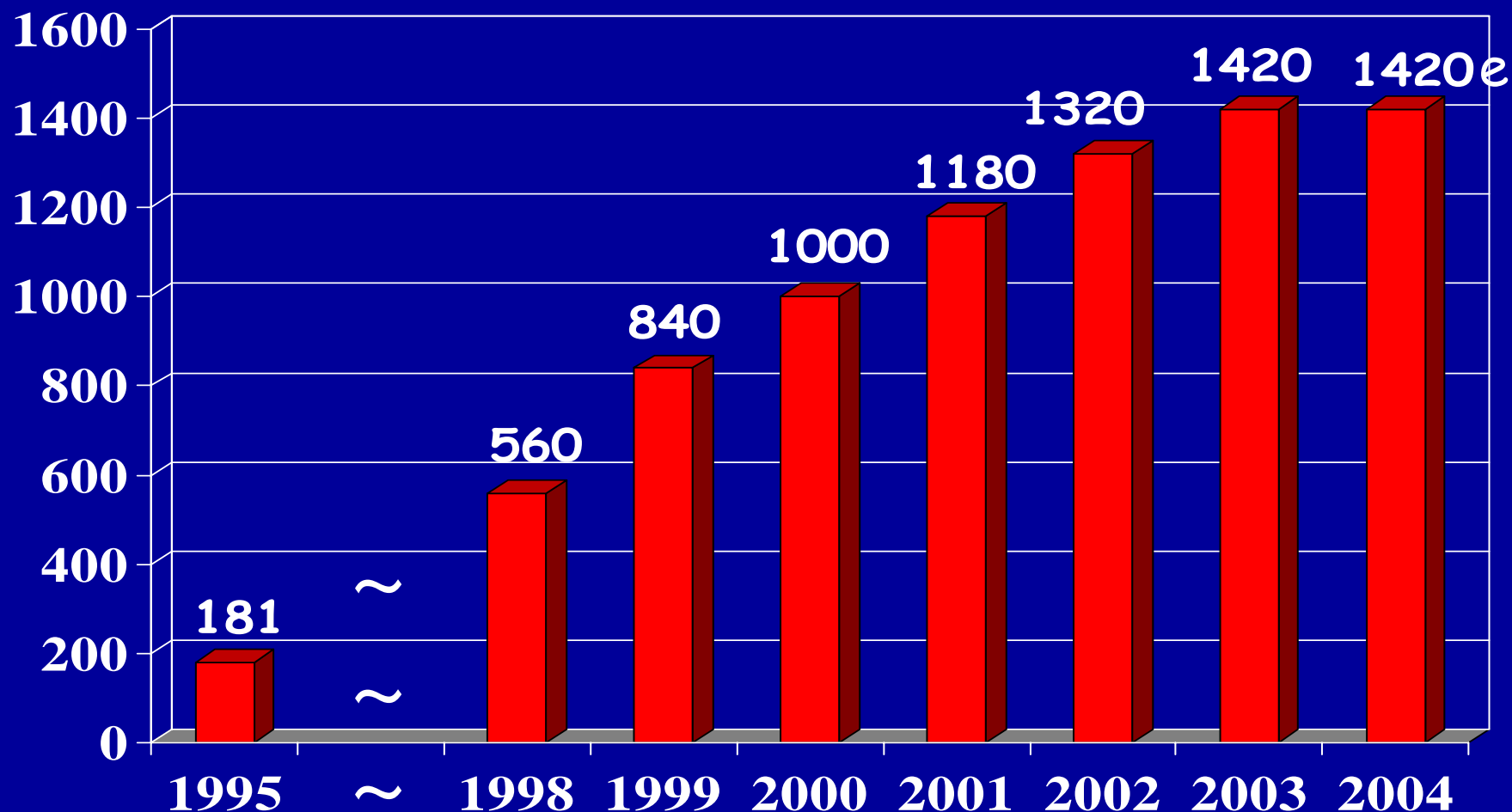


GOM production has been significantly lowered due to hurricanes in 2004 and 2005

# Gulf of Mexico Deep Water Oil Production



# Gulf of Mexico Deep Water Gas Production



■ Billions of Cubic Feet (BCF) Per Year **MMS**

As of 5/6/05

New developments suggest a bright future  
for the Gulf



# Gulf Deep Water Discoveries - 2004

Prospect	Operator	Area / Block	Water Depth'
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Tobago	Shell Offshore	AC 859	9,627'
Silvertip	ChevronTexaco	AC 815	9,226'
Tiger	ChevronTexaco	AC 818	9,004'
Cheyenne	Anadarko Petroleum	LL 399	8,987'
Atlas NW	Anadarko Petroleum	LL 005	8,810'
Dachshund/Mondo	Anadarko Petroleum	LL 002	8,340'
San Jacinto	Dominion Exploration	DC 618/619	7,850'
Jack	ChevronTexaco	WR 759	6,965'
La Femme	Newfield Exploration	MC 427	5,800'
Thunder Hawk	Murphy Exploration	MC 734	5,724'
Goldfinger	Dominion Exploration	MC 771	5,423'
Ticonderoga	Kerr-McGee	GC 768	5,250'
Puma	BP Exp. & Prod. Inc.	GC 823	4,130'
Dawson Deep	Kerr-McGee	GB 625	2,900'
Crested Butte	Nexen Pet. U.S.A.	GC 242	2,846'

# Gulf Deep Water Discoveries - 2005

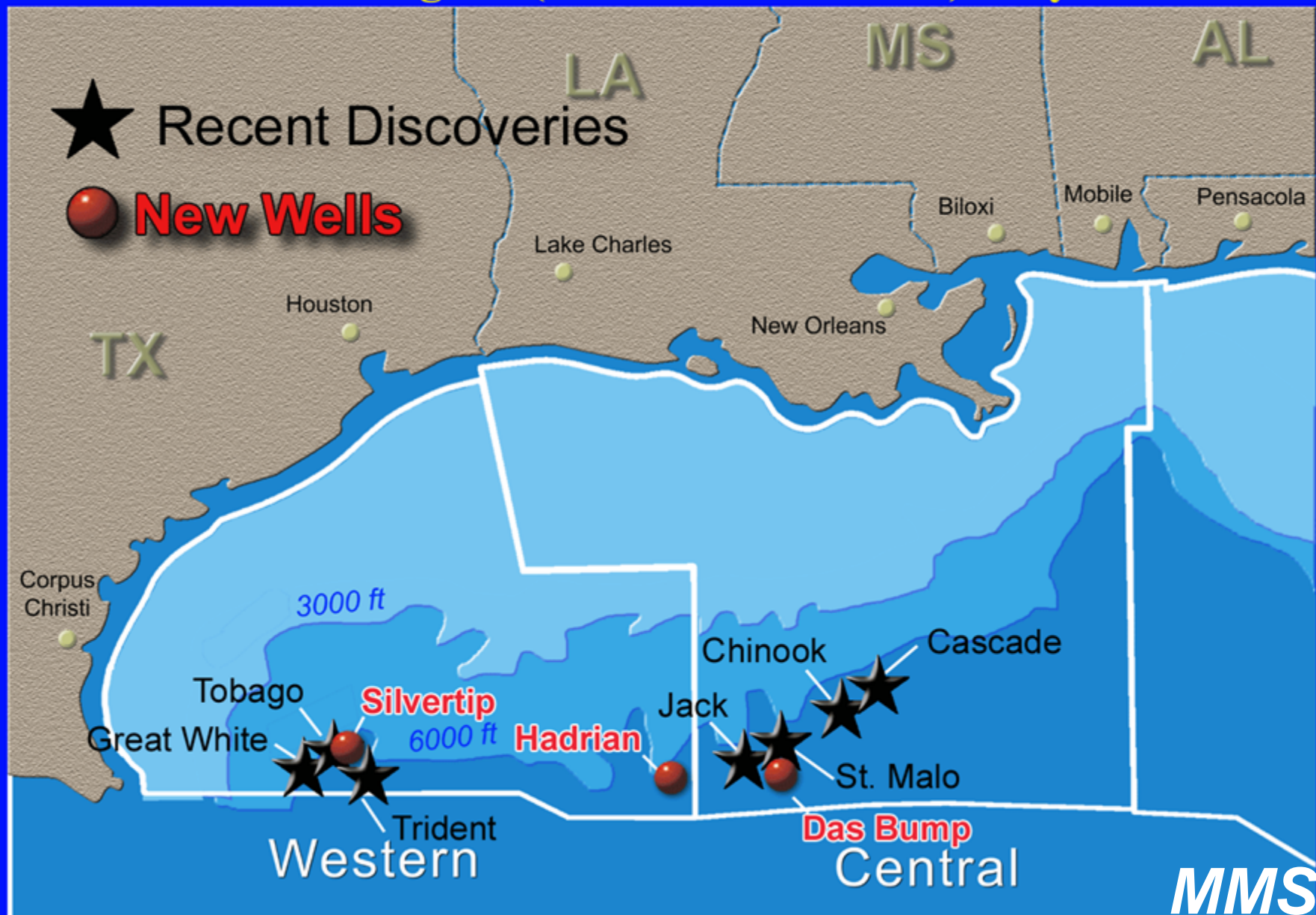
Prospect	Operator	Area / Block	Water Depth'
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Stones	BP	WR BLK 508	9576 ft.
Jubilee Ext.	Anadarko	LR BLK 309	8774 ft.
Mondo NW Ext.	Anadarko	LR Blk 001	8340 ft.
Q	Spinnaker	MC BLK 961	7925 ft.
Genghis Khan	Anadarko	GC BLK 652	4300 ft.
Wrigley	Newfield	MC BLK 506	3700 ft.
Knotty Head	Chevron/Unocal	GC BLK 512	3557 ft.
Clipper	Pioneer	GC BLK 299	3452 ft.
Anduin	Nexen	MC BLK 755	2400 ft.

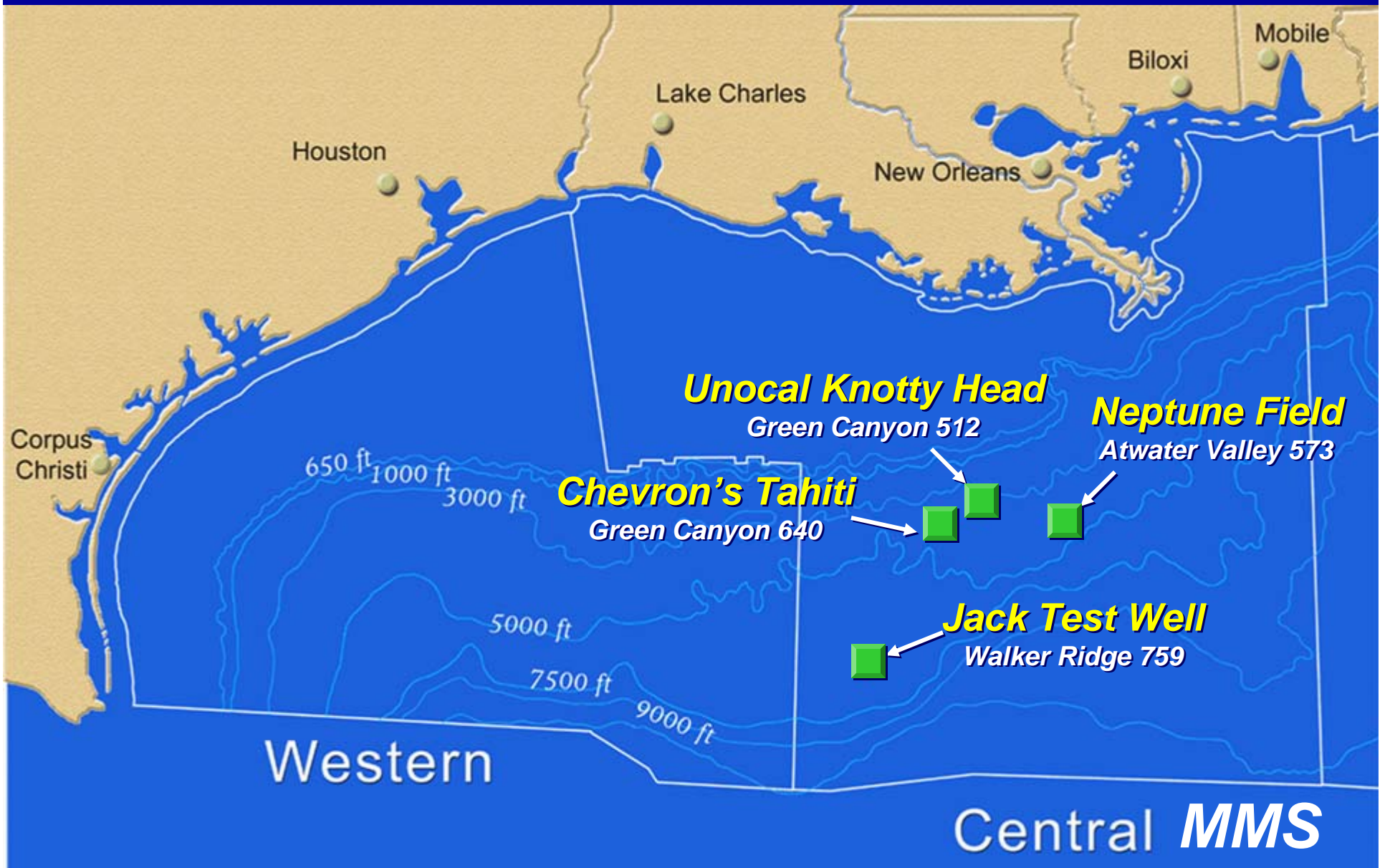


# Recent Ultra-Deep Water Activity

## Paleogene (aka Eocene/Wilcox) Play



# Major New Activity





# Seismic Noise Remains as an Issue

Environmental Study

# **MMS Sperm Whale Seismic Study – Part II (SWSS II)**

- **Awarded in 2005**
- **Understand sperm whales movements, and feeding and breeding behavior**
- **Characterize industry/ambient noise**
- **Determine acoustic effects on sperm whales**